

thing of the personal history of those pioneers in technology who have been so largely instrumental in bringing one of our staple industries to its present pitch of development. T. E. THORPE.

AIDS TO PHOTOGRAPHY.

- (1) *The Year-book of Photography for 1906-7*. Edited by F. J. Mortimer. Pp. 618. (London: The Photographic News, 1906.) Price 1s. paper, 1s. 6d. cloth.
- (2) *The Photographic Picture Post-card*. By E. J. Wall and H. Snowden Ward. Pp. 104. (London: Dawbarn and Ward, Ltd., 1906.) Price 1s. net.
- (3) *Magnesium Light Photography*. By E. J. Mortimer. Pp. 88. (London: Dawbarn and Ward, Ltd., 1906.) Price 1s. net.

(1) THE present number is the forty-seventh issue of this hardy annual, and the amateur or professional photographer will not have much to complain about when he has entirely digested its contents. In its present form it is a mine of photographic information, and contains data which are indispensable to every worker. Thus there are useful hints for negative making and finishing, complete and up-to-date directories of the photographic societies of the United Kingdom, a collection of useful recipes, formulæ, and reference tables of general use for every kind of work.

In addition to these and many other data which are valuable to the working photographer, there is a series of very interesting and helpful articles. These have been written by such well-known men as Robert Demachy, Walter Benington, George E. Brown, E. J. Wall, and others, and are on those particular subjects which have brought their names in the front rank. Two full and very practical articles on bromide and gas-light printing are contributed by the editor, and these contain much that is new and useful to the practical worker.

In fact, the volume should naturally find itself in the hands of every photographer, and is an indispensable book of reference. Sixteen full-page illustrations on art paper accompany the text, and an excellent index completes the volume.

(2) In this book the authors describe the making of picture post-cards from the initial sizing of the card down to the finished article. The beginner should find no trouble in following the instructions laid out, for the authors have described the various manipulations in clear and concise language.

Chapters are devoted also to photomechanical processes of producing a number of cards of one subject and to colouring post-cards, while part ii. of the book deals with such information as how to publish the cards, how to sell rights of reproduction, &c. Those who have a fancy for printing their negatives in this manner will gain some useful wrinkles by carefully reading this guide.

(3) Mr. Mortimer describes another phase of camera work which is as useful to the amateur as the professional. Mr. Mortimer does not let the worker take much for granted, for in these pages he refers to nearly every kind of subject that may be met with,

from a flower study in a studio to the stoke-hold of a warship. The value of the text is very much enhanced by some excellent illustrations indicating not only the relative positions of camera, subject, and flash-lamp, but the actual results produced in these circumstances.

Beginners and others will do well to read this book, which embodies the results of one who has had a very wide and successful practical experience in this branch of the subject.

OUR BOOK SHELF.

The Rusts of Australia; their Structure, Nature, and Classification. By D. McAlpine. Pp. vii+349; plates, 55. (Melbourne: R. S. Brain, Government Printer, 1906.)

THIS book is published by the Department of Agriculture of Victoria, and represents the labour of many years on the part of the Government pathologist (vegetable). The first part, up to p. 75, contains much useful matter, although, of course, only a summary of the work of others. The second part is also necessary and useful, but contains some serious blemishes.

The author records sixty-three new species, the majority of which are more or less unsound, being simply forms of the same fungus growing on different hosts; and when, as on pp. 160, 165, the hosts have been incorrectly determined, the fungi have been given incorrect names. The author does not err alone in this matter, but the better botanists set their faces strongly against this practice of naming parasites according to their hosts without any experimental inquiry as to whether the same fungus might not infest many hosts, as in fact they do in many cases, and can probably be caused to do in still more. The seventy-two rusts recorded in Cooke's "Handbook to the Fungus Flora of Australia" are now increased to 161, but it is difficult to say to what extent this merely represents records of previously known species on new hosts. In some cases the new species are supposed to be distinguished by minute differences in the shape and character of the spores. Yet on Plate xl., p. 320, are figures of abnormal spores of one species giving a greater range than that which in others makes new species. A good instance of the confusion which arises from the system of naming is given on p. 169, where four names are inextricably entangled, and the author solves this difficulty by creating a name of his own, and so making matters worse for subsequent investigators.

The coloured plates are good, with the exception of Plate i., which is useless for fungal diagnosis. There are far too many photomicrographs; a few give verisimilitude to a paper and confirm the *bona fides* of the author, but good hand drawings are always better for reference if they can be relied on.

On the whole, there can be no doubt that the book is a useful one. A few typographical errors, such as *Schelhammera* for *Schellhammeria*, are unavoidable in a work of this kind, but our author is mistaken in supposing that the Kew index is an infallible guide in questions of synonymy and in the naming of species. It would have been better, both from the scientific and economic points of view, if the work on which the book is based had been more experimental and less taxonomic in character. Probably the author felt that owing to the amount of ground to be covered only a general review of it

could be attempted, which should serve as a foundation for further detailed investigations of the important questions connected with these plant parasites.

The Dissociation of a Personality, a Biographical Study in Abnormal Psychology. By Dr. Morton Prince. Pp. x+569. (London: Longmans, Green and Co., 1906.) Price 10s. 6d. net.

OF all the problems raised by the investigations of that section of modern psychology which deals with the abnormal and neurasthenic, those concerned with what is called multiple personality are perhaps the most interesting for psychology and philosophy as a whole. Cases of multiple personality are comparatively rare, and this book is of great value as being a very full and careful account of quite the most remarkable of such cases known to us. Dr. Prince had "Miss Beauchamp" under his care from the time when a second personality first manifested itself until "the real Miss Beauchamp" was at length discovered and restored. It is the great merit of the book that the author abstains almost altogether from theories. These he promises us in a further volume. In this he contents himself with a careful history of the details of the extraordinary case. Extraordinary it certainly is. There were three distinct and entirely different personalities. Of these, two known as B I and B IV, were alternating, and only knew of each other by inference. Dr. Prince evidently considers that they were caused by "the splitting up the original personality" and loss of memory due to an intense mental shock. Not the least interesting part of the book is an account of the striking oppositions in what we should be inclined to call bodily characteristics, manifested by those two personalities. But the personality known as B II, or "Sally," is most interesting of all. Not only did she exist as an alternating personality with B I and B IV, but she went on being conscious all the time, while B I and B IV were in possession of the body, with the difference that in the one case she was conscious, not only of outside events, but of B I's thoughts, while in the other she was aware always of what B IV said and did, but not of what she thought. The consequence is that the study of Sally throws light on many questions concerning subconscious personality, and such phenomena as dreams, hallucinations, &c. The questions raised by the whole story in regard to how a personality is constituted, and what either an associated or a dissociated personality can mean, are many and important, but a discussion of the philosophical importance of the facts recorded here had better be postponed until the appearance of Dr. Prince's promised second volume. Meanwhile, the book can be recommended to all interested in questions of abnormal psychology. The facts of the case are told in a very direct and interesting way.

A. D. L.

The "Lloyd" Guide to Australasia. Edited by A. G. Plate for the Norddeutscher Lloyd, Bremen. Pp. 469+ix. (London: Edward Stanford, 1906.) Price 6s.

THIS compact handbook on Australia should prove of great service to tourists visiting the Antipodes. The volume is profusely illustrated, and generously provided with maps and plans. Great care appears to have been taken in making the information up to date. The volume may not only be commended to travellers, but also to teachers of geography in secondary schools, who will find it useful as a supplement to their class-books.

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LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

Presence of Neon in Radio-active Minerals.

I HAVE for some time been engaged in a search for the rare gases, along with helium, in the radio-active minerals. The earlier results were negative, but I have just found a trace of neon in two minerals—zircon and cyrtolite. I cannot give definite quantities, but should guess that the neon is not so much as 1/300th part of the helium.

The separations have been made by Sir James Dewar's charcoal method. He suggested this application of the method in his original publication of it.

I cannot yet state positively whether or not the presence of neon with helium is general. The manipulation has been progressively improved, and it may be that on repeating the earlier experiments on other helium-bearing minerals neon will be detected. On the other hand, it may be that the presence of neon is connected with zirconia, for both of the above minerals contain it.

R. J. STRUTT.

Sunnyside, Cambridge.

Radium and Helium.

IN NATURE of October 25 Prof. E. Rutherford has briefly restated the arguments for considering that radio-active phenomena are probably associated with atomic degradation, and that, as a rule, the loss of an atom of helium accompanies such changes, the atomic weight of the substance undergoing transformation being diminished by 4, the atomic weight of helium.

With this assumption, the transformation of the uranium atom (238.5) into radium (225) occurs owing to the loss of three helium atoms, whilst the change of radium into lead (206.5) is due to the loss of five such atoms. The numbers are not, however, in strict agreement with this view, for $238.5 - 3 \times 4 = 226.5$ instead of 225, and $225 - 5 \times 4 = 205$ instead of 206.5.

This objection can, however, be removed by assuming that the atomic weight of radium is not 225, but 226.5, for we then have

$$238.5 - 3 \times 4 = 226.5$$

and

$$226.5 - 5 \times 4 = 206.5.$$

The above assumption, that the atomic weight of radium is slightly higher than that obtained by Madame Curie in her latest determination, does not, indeed, appear improbable when it is remembered that the first determination of the atomic weight of radium by Madame Curie gave a value of 146, and that the atomic weight has become greater and greater as the material used has been more and more purified. Madame Curie now considers that her latest value is correct to within a single unit, but she states that the material she employed contained a minute quantity of barium.

B. WALTER.

Hamburg, physikalisches Staatslaboratorium,
November 6.

Magnetostriction.

IN your issue of March 24, 1904, Mr. Nagaoka gives an account of a lecture experiment on magnetostriction; a few weeks later Prof. W. S. Franklin describes an experiment of the same kind. Both experimenters use a vertical solenoid, along the axis of which is fixed at its upper extremity an iron wire. When a current is sent through wire and solenoid, the wire is twisted. The explanation given is that the wire is magnetised helically, the expansion along the lines of magnetisation resulting in a twist of the free lower extremity.

May not the result of the experiment be accounted for in the following way? When a current enters at a pole and passes out at the centre of a freely suspended magnet, the magnet rotates about its axis. If, then, the current enters at one pole and passes out at the other—as both halves tend to rotate in opposite directions—one end of the magnet should be twisted relatively to the other.

D. O. S. DAVIES.

138 Earlham Road, Norwich, November 16.